Atmos. Chem. Phys. Discuss., 13, C9662–C9663, 2013
www.atmos-chem-phys-discuss.net/13/C9662/2013/

Atmospheric Chemistry and Physics Discussions

Interactive comment on "An assessment of the performance of the Monitor for AeRosols and GAses in ambient air (MARGA): a semi-continuous method for soluble compounds" *by* I. C. Rumsey et al.

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Received and published: 9 December 2013

Response: To provide a wider discussion of the N2O5 artifact, we have now added further information to the manuscript on the Phillips et al. (2013) study. We have also now added information that states that the magnitude of the artifact varies geographically due to atmospheric chemical and physical factors, and have clarified that for this particular study, the magnitude of the artifact is likely small. The information added to the manuscript on the N2O5 artifact is now as follows:

"It is acknowledged that both the Na2CO3 denuder and the WRD are sensitive to measuring dinitrogen pentoxide (N2O5) as NO3- during the nighttime (Phillips et al., 2013). However, since both sampling techniques are likely influenced in a similar way, it will not affect the comparison between the Na2CO3 denuder and the WRD. This artifact may influence measured concentration levels. Phillips et al. (2013) reported that on average N2O5 contributed 17% of MARGA measured nighttime HNO3 at a sampling site near Frankfurt, Germany. The magnitude of N2O5 concentration varies in different geographic locations and is influenced by NO concentration, biogenic volatile organic compound concentrations and air temperature (Phillips et al., 2013). In this study, the influence of N2O5 on measured HNO3 is likely to be small as N2O5 concentration levels are expected to be low due to high nitric oxide (NO) and biogenic VOC concentrations and warm air temperatures, which decrease N2O5 concentrations."

Interactive comment on Atmos. Chem. Phys. Discuss., 13, 25067, 2013.